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ABSTRACT

Guidelines and criteria are presented for use by New Jersey colleges in preparing proposals for the modification, expansion, or creation of engineering and technology education programs. The document first outlines the minimum components of the formal proposal, which include: (1) title page; (2) letter of transmittal; (3) abstract; (4) table of contents; (5) background, which covers institutional history, coordination within the state, similar programs in New Jersey, available facilities and equipment, tuition and projected costs, and a program description; (6) justification for the program, which considers manpower data, task force reports, the State Master Plan, and the estimated size of the program; (7) program operation, which includes location, sponsor, administration, students, articulation, credit, requirements, and accreditation sought; (8) curriculum, which outlines basic science, non-technical, technical, theory, and laboratory requirements, as well as course descriptions and prerequisites; (9) cost analysis, which covers facility construction and alteration, equipment, supplies, maintenance, staff, funding base, and evaluation system; (10) reporting system, and (11) the implementation schedule. Criteria for each element in these components are then identified and defined. The document concludes with an illustration of the proposal taxonomy. (JP)

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NEW JERSEY STATE ADVISORY COUNCIL

on

ENGINEERING AND TECHNOLOGY

PROGRAM PROPOSAL

GUIDELINES AND CRITERIA

By

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1979

JC 800 134

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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INTRODUCTION

The New Jersey Advisory Committee on Engineering and Technology was created by the Department of Higher Education, State of New Jersey, to give recommendations to that Department concerning proposed modification, expansion or creation of engineering and technology education programs. In order to give recommendations, the Advisory Committee needed a set of guidelines and criteria which the members feel will allow them to consistently critique all proposals. The Committee offers the guidelines and criteria to any institution, public and private, planning to submit a proposal.

Institutional representatives submitting proposals are encouraged to examine these guidelines and criteria so the proposal will answer the basic questions: Who?, What?, When?, Why?, Where?, and How? The key word for the person/s writing the proposal is be SPECIFIC.

Submitted by:
Charles R. Doty
Adviser in Technical Education

PROPOSAL COMPONENTS

The proposal should contain the following minimum components:

- Title Page
- Letter of Transmittal
- Abstract
- Table of Contents
  - Acknowledgements
  - Chapters/Sections
  - List of Tables
  - List of Figures
  - References
  - Appendix
    - Definition of Terms
    - Program Approval Procedure
    - Tenured Faculty Vita

- Background
  - History of Institution
  - Prior Technological Curricula
  - Origination of Idea for Program Modification, Expansion or Creation of New Program

- Coordination Within State

- Programs (Similar) Offered in State
  - Public Institutions
  - Private Institutions
- Facilities Available in State
  - Public Institutions
  - Private Institutions
- Equipment Available in State
  - Public Institutions
  - Private Institutions
- Sharing (also see Articulation)

- Tuition and Projected Costs
  - Proposing Institution
  - Public Institutions
  - Private Institutions

- Program Description
  - Title
  - Definition
  - Modification, Expansion or Creation
  - Anticipated Starting Date
  - Program Objectives
  - Technical Specialties Within Program
  - Degrees to be Awarded for Technical Specialties
  - Population to be Served

Justification for Program
- Manpower Data
  - Local Needs Survey
  - Regional Needs Survey
  - State
  - National
- Task Force Reports
- State Master Plan
- Estimated Size of Program
  - Beginning Stages
    - Full Time Students
    - Part Time Students
  - Full Operation
    - Full Time Students
    - Part Time Students

Program Operation
- Location
- Sponsor
- Administrative Structure and Responsibility
- Advisory Committee
- Student Selection
- Advisers for Technical Specialties
- Articulation
- Credit in Escrow
- Transfer/Non Transfer
- Day and Evening Plan
- Continuing Education
- Availability to Student
- Facility Requirements
- Equipment Requirements
- Faculty Requirements
- Accreditation Sought

Curriculum
- Basic Science Requirements
- Non-Technical Requirements
- Technical Specialty Requirements
- Required Theory and Laboratory Experience
- Course Descriptions
  - Catalog Description
  - Educational Objectives
- Prerequisites

Cost Analysis

- New Construction of Facilities
- Alterations of Existing Facilities
- Equipment
- Supplies
- Maintenance
- Staff
  - Instructional
  - Non-Instructional
- Operational, e.g. heat, electrical
- Funding Base
- Evaluation System

Reporting System

Implementation Schedule (PERT)

CRITERIA

The following criteria for each component in the proposal have been obtained from proposals submitted to the Advisory Committee and from the minutes of the Advisory Committee.

Title Page. The title page should contain: 1) program title; 2) institution name; 3) address and 4) date of issue.

Letter of Transmittal. This letter should state: 1) that the proposal has been approved by the appropriate authorities in the submitting institution; 2) and expected date for approval by the Department of Higher Education; 3) a designated person, position or office whom the Advisory Council or Department of Higher Education may contact at the institution and 4) signed by the authorized administrator to issue the proposal.

Abstract. The abstract should be a summary of the main components of the proposal. Critical items as: 1) title; 2) definition; 3) program objectives; 4) population to be served; 5) data and 6) coordination within the State should be included.

Definition of terms. The proposal writer should assume that persons without a technical background will be reading the proposal. Therefore, terms which would be new to these persons should be included in this component.

Program Approval Procedure. This section should be used to describe the steps necessary to obtain program approval within the submitting institution and external to the institution. This section is necessary so there will be no misunderstanding of who is to approve the program and in what sequence.

Tenured Faculty Vita. Background data on tenured faculty should include: 1) industrial experience; 2) education; 3) teaching experience; 4) professional affiliations; 5) awards or recognition; 6) publications; 7) consulting and 8) presentations.

History of Institution. Briefly trace the historical development of the institution emphasizing the institutional philosophy and commitment to engineering and technical education.

Prior Technological Curricula. State the technological programs and/or courses presently offered by the institution. Give the dates of their initiation and an indication of their past and present status, e.g. enrollment, accreditation and predicted future.

Origination of Idea. What person, institution or association/ organization initiated the program proposal?

Title. Give the title as it would appear in the institution catalog.

Definition. Briefly explain if the program is: 1) upper or lower program; 2) degree program; 3) primary objective in terms of student capability; 4) career ladder potential and 5) limitations.

Modification, Expansion or Creation. A definite statement of the intent of the proposal for modification, expansion or creation of a new program is needed.

Anticipated Starting Date. This date indicates when students will be enrolled.

Program Objectives. These are statements of expected outcomes from the program. These statements are the basis upon which all program planning, i.e. administration, instruction and curriculum, will be based.

Technical Specialties Within Program. Those technical specialties which a student may choose within the program must be identified and defined. Program approval will only be for those specialties identified in the proposal.

Degrees to be Awarded for Technical Specialties. Specify for each specialty within the program the degree or degrees that a student may receive. Include certificate awards.

Population to be Served. Those groups of persons who may be served should be identified and specific data indicating size should be given.

Justification for Programs. The justification component will provide the proposal writer the opportunity to prove the program is needed. Manpower data from the local/regional needs survey must be supplied. The methodology for conducting the needs survey should be given. Data from State and national sources must be included. Ad hoc task force reports on feasibility of initiating and operating the program should be included. Longitudinal estimates of employability in the specialty areas are required. The integration of the proposed program and the State master plan is to be stated. Program student enrollment must be estimated for the beginning stages and full operation for full time and part time students. Sources of students (industry, schools, etc.) should be cited. These sources should be given by name, e.g. Ciba.

Coordination Within State. In addition to the statement concerning the integration of the proposed program and the State master plan, the proposal must contain an inventory of similar programs, facilities and equipment available in the State in public and private institutions. A plan for potential sharing of these assets should be included or any agreement/s for sharing that will occur upon approval of the proposal.

Tuition and Projected Costs. All expected expenses to be paid by the student are to be itemized.

Location. The location/s address should be specified.

Sponsor. The institution, school and department sponsoring the proposal are needed.

Administrative Structure and Responsibility. An organizational chart should be included. The responsibility of each position in the organizational chart concerning the proposed program should be described.

Advisory Committee. Planned representation on the advisory committee should be given.

Student Selection. Specific criteria to be used for student selection for each technical specialty are needed.

Advisers for Technical Specialties. The necessary qualifications for adviser/s for each technical specialty are to be written.

Articulation. A plan for articulation is to be included with names of specific institutions who will be asked or have agreed to cooperate. Any agreements should be included.

Credit in Escrow. Plans for credit in escrow should be included with names of institutions who will be asked or have agreed to cooperate.

Transfer/Non Transfer. Transfer or non transfer provisions for each technical option within the program must be specified.

Day and Evening Plan. Provisions for day and evening schedules should be included with specifications showing what student populations will be served.

Continuing Education. Plans for continuing education, adult education, field services, etc., to be offered as a result of the proposed program should be given.

Availability to Student. Regarding the location/s specify the availability of transportation to the site for day and evening offerings.

Facility Requirements. Give specifications for needed facilities. Architectural plans and specifications will fulfill this component. Indicate available facilities and new facilities needed.

Equipment Requirements. Give specifications for needed equipment. Indicate available equipment and equipment which must be purchased.

Faculty Requirements. Specify needed qualifications of faculty for each technical specialty. Indicate those qualifications presently available by staff.

Cost Analysis. The cost analysis should include not only the initiation costs but the projected costs for a minimum of five years.

Funding Base. With cost estimates determined, the funding base and projected income may be calculated to determine the cost feasibility of the program. Funding problems and alternative solution plans should be stated.

Evaluation System. The plan for program evaluation should be given with designation of what position, office and/or department, etc., will be responsible for executing the system.

Reporting System. The plan for reporting to the appropriate authorities should be given with designation of what position, office and/or department, etc., will be responsible for reporting.

Implementation Schedule. A flow chart of PERT with dates specified should be included to indicate the implementation of the program and the operation of the program up to a minimum of five years.

Accreditation Sought. Plans for accreditation should be given with specifics on accreditation names and requirements.

Curriculum. Requirements in basic science, non-technical and technical specialty should be described. Required percentages of theory and laboratory experience should be calculated. Course descriptions that will be printed in the institution catalog should be given. In addition, educational objectives for each course should be specified. The attached matrix[1] may be used to structure a comprehensive set of educational objectives specifying expected student performance. Prerequisites for any course/s should be given.

[1]Yagi, K. et al., The Design and Evaluation of Vocational Technical Education Curricula Through Functional Job Analysis. Alexandria, Virginia: Human Resources Research Organization, June 1971. (ED 023913)

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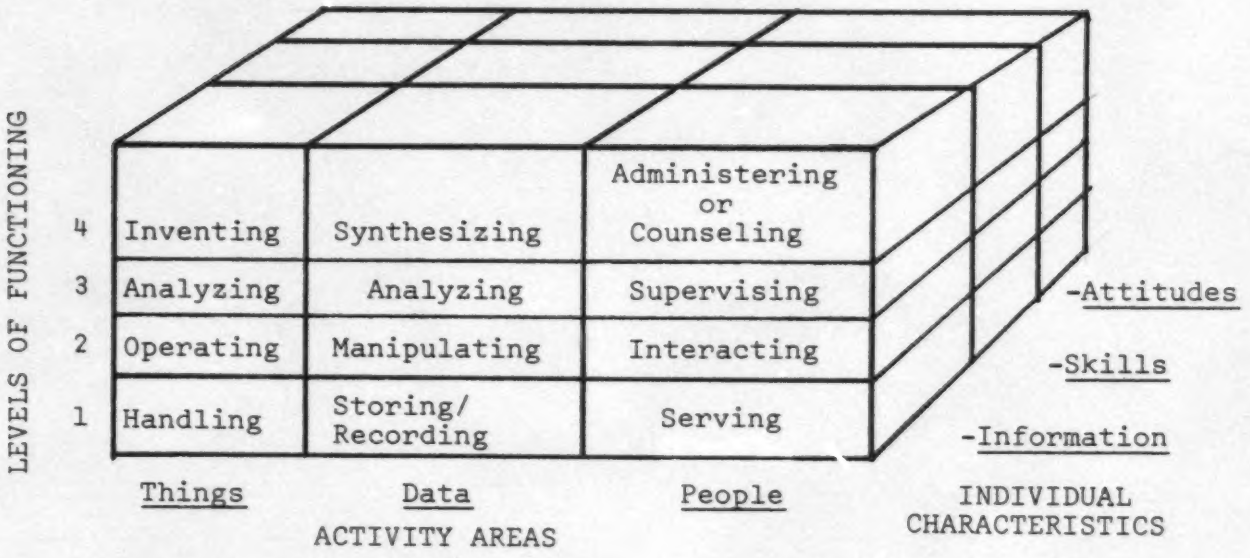
Three-Dimensional Representation of Taxonomy



Sequence of Levels of Functioning in Each Activity Area of the Taxonomy (in ascending order within area)

THINGS	DATA	PEOPLE	
Inventing	**Synthesizing**	**Administering**	**Counseling**
Design	Generalize	Manage	Treat
Create	Theorize	Negotiate	Mediate
Develop	Formulate	Formulate	Advise
			Educate
Analyzing	**Analyzing**	**Supervising**	
Test	Examine	Oversee	
Assay	Diagnose	Direct	
Troubleshoot	Classify		
Operating	**Manipulating**	**Interacting**	
Drive	Compute	Inform	
Control	Edit	Discuss	
Employ	Compile	Instruct	
Assemble	Translate	Persuade	
Handling	**Storing/ Recording**	**Serving**	
Clean	Register	Execute Orders	
Carry	Memorize	Take Instruction	
Stack	Sort	Assist	
Sort	Post	Comply	
Pack	List		